

5 CLAIMS

WHAT IS CLAIMED IS:

1. An apparatus to plasma coat a stent, comprising:
 - a mandrel supporting a stent;
 - a first plasma member circumscribing the mandrel, the first plasma member being
10 grounded;
 - a second plasma member circumscribing the first plasma member; and
 - a plasma generating source in communication with the second plasma member.
2. The apparatus of Claim 1, wherein the first plasma member is a first hollow
tubular body in which the mandrel is positioned, and wherein the second plasma member is a
15 second hollow tubular body in which the first hollow tubular body is positioned.
3. The apparatus of Claim 2, wherein the first and second hollow tubular bodies
include perforations.
4. The apparatus of Claim 2, wherein the stent is positioned in the center of the first
hollow body.
- 20 5. The apparatus of Claim 1, wherein the stent does not contact the first plasma
member during the coating process.
6. The apparatus of Claim 1, wherein the first plasma member is a hollow tubular
body in which the mandrel is positioned and wherein the second plasma member is a coil
element wrapped around the first tubular body.
- 25 7. The apparatus of Claim 1, wherein the plasma generating source is a radio
frequency generating source or a microwave generating source.
8. The apparatus of Claim 1, additionally including

5 a first plate member in communication with the first plasma member;
 a second plate member positioned over the first plate member and in communication
with the second plasma member; and
 an insulator disposed between the first and second plate members to electrically
insulate the plate members.

10 9. The apparatus of Claim 8, wherein the mandrel extends from the first plate
member into the first plasma element.

 10. An apparatus to coat an implantable medical device, comprising:
 a first tubular member;
 a second tubular member in which an implantable medical device can be placed,
15 the second tubular member being positioned within the first tubular member and the
second tubular member being electrically isolated from the first tubular member; and
 an energy source in communication with the first tubular member.

11. The apparatus of Claim 10, wherein tubular members include bodies having holes
disposed therein.

20 12. The apparatus of Claim 10, wherein the energy source is configured to create
plasma within the first tubular body.

13. The apparatus of Claim 10, wherein the second tubular body is grounded.

14. The apparatus of Claim 10, wherein the implantable medical device is a stent and
wherein the apparatus further comprises a mandrel extending within the second tubular
25 member for supporting the stent.

15. A method of forming a coating for an implantable medical device, comprising:

- 5 (a) placing the an implantable medical device within the apparatus of Claim 10, the
apparatus being positioned in an enclosed chamber;
- (b) supplying a plasma-polymerizable monomer or a blend of monomers in a gaseous
form into the chamber; and
- (c) initiating a plasma to the to cause the polymerization of the monomer to form a
10 coating on the implantable medical device.
16. The method of Claim 15, additionally including grounding the second tubular
member.